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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/414,518	10/08/1999	BRIAN YANG	EM/YANG/5037	3398

7590 10/07/2004  
BACON & THOMAS  
625 SLATERS LANE  
4TH FLOOR  
ALEXANDRIA, VA 22314

EXAMINER

GRIER, LAURA A

ART UNIT PAPER NUMBER

2644

DATE MAILED: 10/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/414,518

Applicant(s)

YANG ET AL.

Examiner

Laura A Grier

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 28-30 and 32-45 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 44 and 45 is/are allowed.
- 6) ☒ Claim(s) 29-30, 32-36, 41-43 is/are rejected.
- 7) ☒ Claim(s) 37-40 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 33-34, 36, 41 and 43** are rejected under 35 U.S.C. 102(b) as being anticipated by Kobayashi.

**Regarding claim 33,** Kobayashi discloses a multi-channel PCM music broadcasting system (figures 1-3). Kobayashi discloses blocks, each block representing a music source, wherein the music source (which indicates voice signals) may include one or more channels, using a digital or analog signal (Col. 2, lines 49-53 and col. 3, lines 9-14), which constitutes generating digital voice signals and transmitting the voice signals through a plurality of channels; each block including the channels (each channel) is time division multiplexed, which indicates time division sampling of voice signal according to periodic channel selecting; and modulated prior to transmission, wherein the adjustment of the magnitude is inherent as evident by modulation; and the signal is transmitted as a combined signal via the mixer (col. 2, lines 49-65) which reads on a multi-channel sampled signal; to a receiver (figure 2), wherein the multi-channel signal of the music sources (voice generator) is coupled with a channel selection controller (27) which is coupled to a D/A conversion to analog signal which indicates

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being generated as an voice output signal and a voice generator for modulating the multi-channel signal via speakers, wherein the speaker(s) is inherently supported as evident by the left and right channels.

Regarding **claim 34**, Kobayashi discloses everything claimed as applied above (see claim 33). Thus it is inherent that the period of channel selecting signal corresponds to the number of channels as evident by the TDM technique.

Regarding **claims 36 and 41**, Kobayashi discloses everything claimed as applied above (see claim 33). Kobayashi discloses a D/A converters, which inherently supports adjusting the magnitudes and converting to signal to an output voice signal.

Regarding **claim 43**, Kobayashi discloses everything claimed as applied above (see claim 33). Thus it is inherent that the each voice signal is sampled a least once as evident by the TDM technique.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 28-29 and 32** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi.

Regarding **claims 28-29**, Kobayashi discloses a multi-channel PCM music broadcasting system (figures 1-3). Kobayashi discloses blocks, each block representing

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a music source, wherein the music source (which indicates voice signals) may include one or more channels, using a digital or analog signal (Col. 2, lines 49-53 and col. 3, lines 9-14), which constitutes generating digital voice signals and transmitting the voice signals through a plurality of channels; each block including the channels (each channel) is time division multiplexed, which indicates time division sampling of voice signal according to period channel selecting; and modulated prior to transmission, wherein the adjustment of the magnitude is inherent as evident by modulation; and the signal is transmitted as a combined signal via the mixer (col. 2, lines 49-65) which reads on a multi-channel sampled signal; to a receiver, wherein the signal is processed via D/A conversion to analog signal which indicates being generated as an voice output signal as evident by the left and right channel (figure 2). However, Kobayashi fails to disclose amplifying the magnitude of the output signal. The examiner takes official notice that use of amplifiers was well known in the art. Thus, it would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Kobayashi by providing an amplifier for the purpose of enhancing the strength and quality of the voice signal.

Regarding **claim 32**, Kobayashi discloses everything claimed as applied above (see claim 28). Thus it is inherent that the each voice signal is sampled a least once as evident by the TDM technique.

5. **Claims 30, 35 and 42** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi.

Regarding claims **30 and 35**, Kobayashi discloses everything claimed as applied above (see claim 28). Kobayashi discloses bit quantization of the digital signals involved in the TDM technique. However, Kobayashi fails to specifically disclose the signal have an eight bit signal. However, an eight bit digital signal is commonly used for transmission of voice signals. Thus it is obvious to provide the digital signals of Kobayashi with a bit value of 8-bit for providing a commonly used field size (6 to 8 bits) of a digital signal when transmitted to comprises a single byte signal.

Regarding claim 42, Kobayashi discloses everything claimed as applied above (see claim 42). The examiner takes official notice that the use of power amplifiers was well known in the art. Thus it would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Kobayashi by coupling a power amplifier to the D/A converters prior to output to the speaker(s) for the purpose of enhancing the signal strength of the output voice for efficient quality sound, wherein power amplifiers are commonly used components in the art of audio signal processing.

6. Claims 44-45 are allowed.

7. **Claims 37-40** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

8. Applicant's arguments with respect to claims 28-30, 32-43 have been considered but are moot in view of the new ground(s) of rejection.

The applicant's argument (in detail) are directed to how Kobayashi fails to disclose the invention. The examiner is aware of the discloses content of the applicant's invention, however, the applicant arguments of the invention are more explicit or detailed than the claimed invention. As written, the claims language of the claimed invention maintains a broad interpretation, and thus, the teachings of Kobayashi is maintained as the primary reference of the rejection of the claims, wherein, Kobayashi disclose a plurality of voice data generators via the music sources, which indicates the generation of a voice signal; modulation, and channel selecting, time-division multiplexing and output an audio signal. In respect to the applicant of Kobayashi not disclose modulation by adjust the magnitude of the signal, this limitation is inherently disclosed as provided in the rejection above because frequency modulation takes place and magnitude is among the characteristics of the frequency, and thus through modulation, an adjust takes place in the characteristics of the frequency.

**Conclusion**

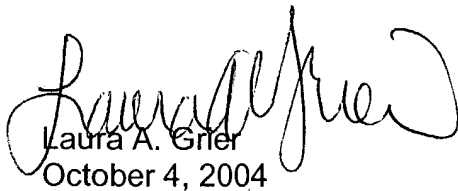
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura A Grier whose telephone number is (703) 306-4819. The examiner can normally be reached on Monday - Friday, 7:30 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W. Isen can be reached on (703) 305-4386. The fax phone

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number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Laura A. Grier  
October 4, 2004